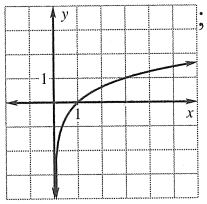
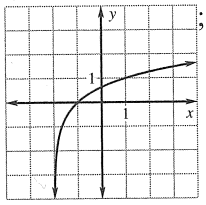
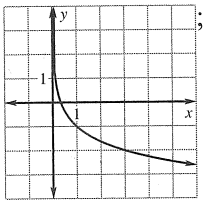
Lesson 7.4, continued

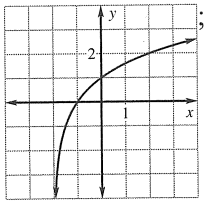
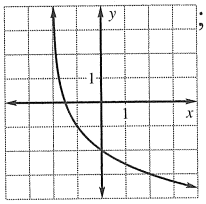
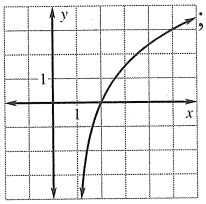
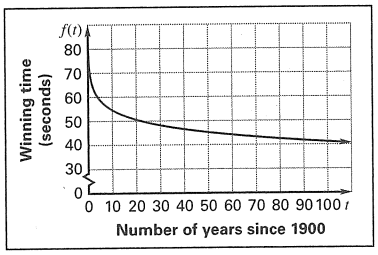
Practice Level A

1. $10^1 = 10$ **2.** $2^2 = 4$ **3.** $3^3 = 27$ **4.** $6^2 = 36$
5. $5^0 = 1$ **6.** $2^4 = 16$ **7.** 2 **8.** 2 **9.** 2 **10.** 1
11. 3 **12.** 3 **13.** 1.255 **14.** 1.778 **15.** 0.816
16. 2.197 **17.** −0.799 **18.** 3.993 **19.** x **20.** x
21. $2x$ **22.** x **23.** $3x$ **24.** $2x$ **25.** B **26.** C
27. A **28.** A **29.** C **30.** B **31.** 110 decibels

Practice Level B

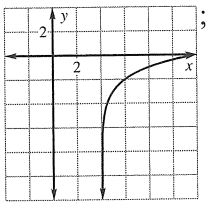
1. $7^2 = 49$ **2.** $2^4 = 16$ **3.** $5^3 = 125$
4. $16^{1/2} = 4$ **5.** $4^{-1} = \frac{1}{4}$ **6.** $3^{-2} = \frac{1}{9}$
7. 2 **8.** 0 **9.** −1 **10.** $\frac{1}{2}$ **11.** $\frac{1}{3}$ **12.** $\frac{2}{3}$
13. 0.805 **14.** 2.041 **15.** −0.693
16. $f^{-1}(x) = 5^x$ **17.** $f^{-1}(x) = e^x$
18. $f^{-1}(x) = \left(\frac{1}{5}\right)^x$ **19.** $f^{-1}(x) = 2(10^x)$
20. $f^{-1}(x) = 6^x - 2$ **21.** $f^{-1}(x) = 3^{x-2}$
22.  ; domain: $x > 0$; range: all real numbers
23.  ; domain: $x > -2$; range: all real numbers
24.  ; domain: $x > 0$; range: all real numbers
25. 129 **26.** 239.4 mi/h

Practice Level C

1. $4^{1/2} = 2$ **2.** $3^4 = 81$ **3.** $\left(\frac{1}{4}\right)^{-3} = 64$
4. −3 **5.** $\frac{3}{2}$ **6.** $\frac{5}{2}$ **7.** $\frac{2}{3}$ **8.** $-\frac{1}{4}$ **9.** $\frac{3}{2}$
10. 2.946 **11.** 7.974 **12.** −8.950
13. $f^{-1}(x) = 7^x$ **14.** $f^{-1}(x) = \frac{3^x}{4}$
15. $f^{-1}(x) = \left(\frac{1}{2}\right)^{x-2}$ **16.** $f^{-1}(x) = e^{x-2}$
17. $f^{-1}(x) = e^{x+3} + 1$ **18.** $f^{-1}(x) = \frac{1}{3}x + 1$
19.  ; domain: $x > -2$; range: all real numbers
20.  ; domain: $x > -2$; range: all real numbers
21.  ; domain: $x > 1$; range: all real numbers
22. 42.79 sec
23. 

24. 40.96 sec

Study Guide

1. $5^3 = 125$ **2.** $11^1 = 11$ **3.** $8^0 = 1$
4. $\left(\frac{1}{3}\right)^{-3} = 27$ **5.** 3 **6.** −2 **7.** −6 **8.** $\frac{1}{5}$
9. 4.5 **10.** $-2x$ **11.** $7x$ **12.** $3x$
13. $y = e^x - 1$ **14.** $y = \log_5 x$
15.  ; domain: $x > 4$, range: all real numbers

Problem Solving Workshop: Mixed Problem Solving

1. a. $y = \log_4(x + 3) + 2$